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VETERINARY JOURNAL

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Biography.

MISS ALEEN CUST, M.R.C.V.S.

THE many friends in the veterinary profession who are acquainted with Miss Cust will congratulate her upon the well-merited result of her unswerving perseverance along the path which has at length led to the award of the much-coveted Diploma.

The pioneer lady doctors fought an uphill fight, but they had the consolation of companionship, for they were, comparatively, numerous, but the pioneer lady veterinary surgeon entered the lists unaided and alone, and it was not until the Sex Disqualification (Removal) Act was passed a very short time ago that the veterinary profession opened its doors to female graduates. More than twenty years ago Miss Cust matriculated and entered as a student at the New Veterinary College, Edinburgh, gaining all the first prize class medals of the first year and the goodwill of teachers and fellow-students alike ; but when her name was presented as desirous of sitting for the professional examination it was refused on the ground that the word " student " implied " male " student.

The cudgels were strongly, but unsuccessfully, taken up on Miss Cust's behalf in the Council Chamber by Principal Williams, and, at the

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same time, the legal aspect was presented in the Scottish Law Courts, but unfortunately Miss Cust was non-suited on the ground of not being domiciled in Scotland. Had the case been presented in an English Court it is probable that the result would have been different.

However, not to be discouraged, Miss Cust decided to continue through the whole of the four years' curriculum, gaining numerous class distinctions and obtaining practical knowledge by pupilage in country practice during the college vacations, to such purpose that she was able afterwards to take up an assistantship, first in Scotland, and then in a very wide and hard-working district in the Roscommon and Galway district of Ireland ; a *clientèle* to which she succeeded on the death of her principal. For more than ten years Miss Cust held the position of Veterinary Inspector under the Galway County Council and the Department of Agriculture in Ireland, together with three Dispensaries, and her practice may truly be said to have been one of the largest and most widespread in the West of Ireland. It speaks well for her observance of the tenets of professional etiquette, and the goodwill which existed between herself and the qualified practitioners around her, that all, without exception, wished her well in her application to the College Council.

It was, however, only from force of circumstances that Miss Cust practised without a Diploma, and the method by which to legitimately obtain this piece of parchment was always her uppermost thought when discussing the subject with friends. It was the Great War which, in a quite unforeseen and unexpected way, brought the opportunity.

In August, 1914, Miss Cust's veterinary services were requisitioned in the examination and purchase of remounts, and in 1915, wishing to get nearer the seat of hostilities, she took her car and volunteered for service with the Y.M.C.A. in France. In 1917 she was appointed to a position in the Veterinary Laboratory attached to No. 8 Veterinary Hospital, and it was this war service and the connection with the Royal Army Veterinary Corps which enabled the R.C.V.S. Council to favourably consider her application for permission to sit for the practical examination only, as a special case, with the result that the Diploma was gained by the first woman graduate on December 20, 1922.

A daughter of the late Sir Leopold Cust, and sister to Sir Charles Cust, Equerry to His Majesty the King, Miss Cust comes of a distinguished family and, in addition to her skill as a veterinary surgeon (for she is an expert operator and diagnostician), is fond of all sports, being a first-class shot and a good rider to hounds.

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Editorials.

THE INADEQUATE SALARIES OF GOVERNMENT DEPARTMENTS.

If support were needed to back up our Editorial in last month's issue on the inadequate salaries offered by our Government Departments one has it pretty plainly stated in the two letters in the correspondence column in this month's issue. The time, too, to ventilate these grievances and endeavour to get them rectified is appropriate, as a number of newly-fledged graduates have just entered our portals, and India, with all its romantic setting, might attract their ambitions. It is possible, of course, that the Government of India considers that the Civil Veterinary Department, as a white man's show, is superfluous, and that this persistent refusal to ameliorate matters is done intentionally. If such be the case it is being done thoroughly, and it is to be hoped that our young men here are taking note of it. Far better to have full knowledge of it and to "look before you leap" than to get across the ocean, tied hand and foot, and be compelled to eke out an existence on a salary which does not enable a white man to live as a white man, and punishes the poor unfortunate recipient in a manner which those who have never lived in the East cannot realise.

It is to be hoped that the unfortunate victims have laid their cases before the Royal College Council, and also before the Salaries Committee of the National Veterinary Association, and that their cases will be supported and persistently pressed to the hilt in the proper quarter until redress is obtained.

TUBERCULOSIS AND THE INEFFICIENCY OF THE MILK AND DAIRIES (AMENDMENT) ACT, 1922.

The Milk and Dairies Order, 1899, made it an offence to sell for human food the milk of a cow affected with tuberculosis of the udder. The Milk and Dairies (Amendment) Act, 1922, increases the penalties attaching to this offence, unless the owner of the cow proves that he did not know, or could not with reasonable care have known, that the cow was so affected.

The Order and the Act, however, give a very ineffective control over the diseased cow, and in the majority of cases, when the owner has received intimation from an Inspector of the Local Authority that a cow in his possession is affected with tuberculosis of the udder, he simply sells the cow, and she may continue to supply milk which is sold for human consumption through another channel.

The difficulty of tracing such animals after they have changed hands is obvious, especially as it is not uncommon for the affected

animals to become the property of several owners within a few days of the first sale. In many cases the cows leave the district and cannot be traced. It has long been clear to those charged with the administration of the Milk and Dairies Order and Act that control of diseased cows only becomes effective when power is obtained to ensure slaughter of the affected animals. The following two cases, related by Professor Gofton, F.R.C.V.S., the chief Veterinary Inspector for the City of Edinburgh, may be cited in illustration of what too frequently happens after an owner has been informed of the presence of a cow affected with tuberculosis of the udder in his herd, and our readers can doubtless recollect scores of similar instances :—

1. A cow was discovered in a byre showing clinical symptoms of tubercular mastitis. The diagnosis was confirmed by microscopical examination of the milk. The owner received notice under a local Act to dispose of the cow, and he returned it to the dealer from whom he had bought it about two months previously. The cow was traced through the hands of two dealers to a farm situated a few miles outside the boundary of the city and was discovered there three or four days after it had been disposed of by the original owner. The milk from the second byre was consigned regularly into the city. Efforts to have the cow disposed of satisfactorily were more successful on the second than on the first occasion, and the animal was removed to the slaughter-house.

2. The preliminary details in regard to this cow were similar to the case just quoted. The dealer to whom the cow was returned consigned her to Cumberland, and on enquiry he expressed his intention to use the milk for feeding calves. It was, of course, impossible to trace the cow to its destination in Cumberland, and whether her milk was used for feeding calves or was passed through another channel for human consumption, the cow remained free to act as a centre for the propagation of tuberculosis either in man or her own species.

The Grading of Milk.

The Minister of Health has made an Order entitled the Milk (Special Designations) Order, 1922, prescribing the conditions subject to which licences may be granted for the sale of milk as "Certified," "Grade A (Tuberculin Tested)," "Grade A," or "Pasteurised." The Order came into operation on January 1, 1923, and copies may be obtained from the Stationery Office either direct or through any bookseller.

The principal conditions laid down in the Order are as follows :—

Certified Milk must be produced from healthy cows which have passed the tuberculin test. It must be bottled on the farm and must satisfy a somewhat severe bacteriological test.

Grade A (Tuberculin Tested) Milk must be produced from healthy

cows which have passed the tuberculin test. It must be bottled before distribution and must satisfy a bacteriolcgical test less severe than that required for certified milk.

Grade A Milk must satisfy the same conditions as Grade A (Tuberculin Tested) milk with the exception of the tuberculin test.

Pasteurised Milk must have been held at a temperature of 145° to 150° Fahrenheit for at least half an hour and then cooled to 55° and it must satisfy a prescribed bacteriological test.

THE ADMISSION OF WOMEN TO THE PROFESSION.

THE admission of the first woman graduate to the veterinary profession can scarcely be allowed to pass without editorial comment, and Miss Cust is to be congratulated on the perseverance which has at last gained for her her heart's desire. The graduation of a batch of women doctors has now ceased to excite public comment, and the respective professions of law and architecture have had, too, to fall into line; but there is no doubt that the public has not yet realised that its daughters have an opportunity of making a livelihood by obtaining the Veterinary Diploma. Three of the authorised teaching colleges have already been invaded by the female student, and although the duties of country practice, or the equine practice in the cities, may prove too strenuous, there is no doubt that in canine and small animal practice the woman graduate has a great opportunity; and in research work, too, the field is open.

General Articles.

CYSTICERCUS TENUICOLLIS CAUSING FATAL LESIONS IN THE LIVER OF THE GOAT, PIG AND LAMB.

By A. W. NOEL PILLERS, F.R.C.V.S.,
Liverpool.

CYSTICERCOSIS is, in the lower animals, not of much importance, save, of course, from a public health point of view. The following, the account of certain post-mortem examinations in which the migrating forms of *Cysticercus tenuicollis* were found to be the cause of death, should therefore be of some general interest. In 1913 Prof. J. W. W. Stephens, F.R.S., of the Liverpool School of Tropical Medicine, showed me an abnormal liver from a goat which had died without other apparent lesions. The organ was crowded with a large number of elongated parasitic cysts, varying from 1 to 2 mm. in length. On section hæmorrhagic areas about the size of a wheat grain were found to be fairly evenly distributed throughout the organ. The goat had been confined in a small pen with a dog, which was afterwards proved to have harboured *Tænia marginata* (*T. hydatigena*). In April, 1914,

I received the liver of a young pig which was suspected of having died of swine fever. It was almost identical to the liver of the goat, save that the cysts were somewhat fewer and that the hæmorrhagic

FIG. 1.—LIVER OF SIX WEEKS OLD LAMB, SHOWING LESIONS DUE TO *Cysticercus tenuicollis*. ANTERIOR SURFACE (⅓ NATURAL SIZE).

areas were more patchy. No history as to the possible origin of the infection was obtained.

FIG. 2.—LEFT LUNG AND LIVER, IN SECTION, OF THE SAME LAMB, SHOWING CYST TRACTS, CYSTS, AND HÆMORRHAGIC AREAS (⅓ NATURAL SIZE).

During the past year I examined the liver and lungs of a lamb about six weeks old. In the former were found similar cysts and

lesions, whilst in the lungs there was a few cysts. In Fig. 1, which is, unfortunately, not very good, the external appearance of the liver is shown. Fig. 2 shows the liver on section and the left lung, across the

FIG. 3.—EARLY FORMS OF *Cysticercus tenuicollis* FROM LAMB'S LIVER ($\times \frac{3}{2}$).

FIG. 4.—LIVER OF PIG ON SECTION AFFECTED WITH *Cysticercus tenuicollis*. THE SPECIMEN HAS BEEN KEPT IN FORMALIN SOLUTION FOR SEVERAL YEARS. MANY CUT CYSTS HAVE DROPPED OUT, BUT THE HÆMORRHAGES SHOW UP CLEARLY.

costal surface of which, at the junction of the middle and posterior thirds, is a tract made by a cyst. Other cysts can also be made out. In the present instance it was stated that two other lambs had died

and that post-mortem examinations had revealed similar lesions. Further material or information was unobtainable. Fig. 3 illustrates two of the small cysts, one of which has collapsed. Apart from the wall they showed few characters. Fig. 4 gives a good picture of the freshly-cut preserved liver. The hæmorrhages show up quite distinctly, but this is not so with the cysts themselves. Some of the blood clots were shot like, easily dissected out with the needle, and seemed to have completely taken the place of a liver lobule, but others were elongated and sausage shaped. It was not possible to detect the point of origin of the hæmorrhages, although it is stated to be in the sub-lobular veins.

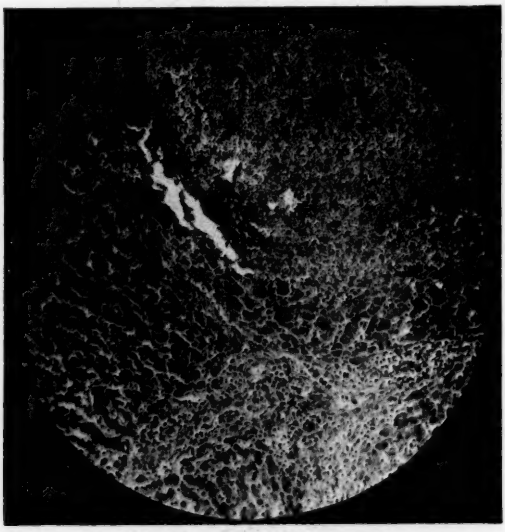

FIG. 5.—LIVER OF PIG, SHOWING RECENT BLOOD CLOT FORMATION, WITH WIDESPREAD CHRONIC INFLAMMATORY CHANGES. × APPROX. 250.

In some cases the entire lobule was completely replaced by clot, the central vein being invisible ; in others a small area of blood could be seen near the fine fibrous capsule of the lobule, and in these cases the central veins were quite distinct. Fig. 5 shows the histology of the lesion, whilst Figs. 6 and 7 give high and low-power views of a cyst and its surrounding blood clot.

Neumann* says : " The experiments of Baillet have shown that this cysticercus reaches the peritoneal cavity through the liver. In a lamb and a kid which died ten days after ingesting segments of

* NEUMANN (Macqueen).—" Parasites and Parasitic Diseases of the Domesticated Animals," 2nd Edition, London, 1905, p. 422.

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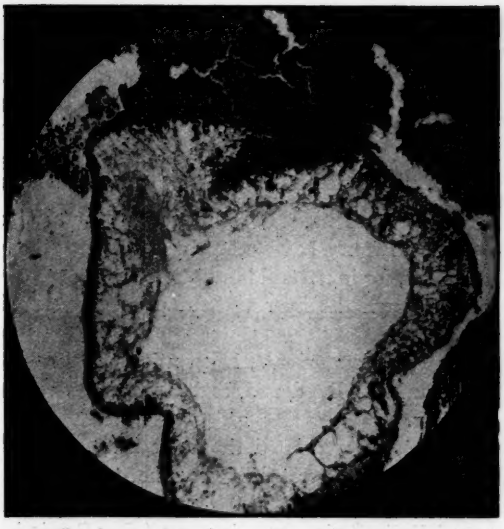

FIG. 6.—EARLY *Cysticercus Tenuicollis* IN LIVER OF PIG, WITH ADHERENT BLOOD CLOT. × APPROX. 250.

FIG. 7.—PORTION OF CYST WALL AND CLOT SHOWN IN FIG. 6. × APPROX. 500.

T. marginata, that authority found the liver traversed by numerous very sinuous canals, each of which was partially blocked by a small blood clot, and was occupied by two or three transparent globular vesicles. Before death the animals exhibited all the symptoms of internal hæmorrhage; the abdominal viscera were bathed in blood, which the slightest pressure caused to transude from every part of the liver. Another kid succumbed on the twenty-fifth day; it showed signs of violent peritonitis and complete 'disorganisation' of the liver. But these lesions have scarcely been observed, except in experimental cases, for in natural infestation the cysticerci are always few and pass through the liver without producing any disturbance in health."

Despite the above statements, he mentions fatal cases in the pig recorded by Leuchart, Boudeaud, and Semmer, and one in a cow reported by Putz.

Many writers have associated the acute inflammatory symptoms described above with bacteria following the course of the invading parasite.

Moussu and Dollar* give two diagrams (after Curtice) of the liver of a lamb which died nine days after being fed with eggs of *Tænia marginata*. These illustrations give a fair idea of the naked eye lesions. Comparing the size of the cysts and the lesions in the present cases with those of experimental records, it would appear that infection took place about 10 to 12 days prior to death. The cysts appear to leave the liver in natural cases about a month after infestation. The present note therefore records naturally occurring fatal cases of cysticercosis due to the cystic stage of *Tænia marginata* of the dog in a pig and lamb, with a somewhat similar case in a goat, and possibly other two cases in lambs.

NOTES ON A FEW DISEASES MET WITH IN EGYPT, OF MUTUAL INTEREST TO THE MEDICAL AND VETERINARY PROFESSIONS.

By D. S. RABAGLIATI, O.B.E., B.Sc., M.R.C.V.S., Major, late R.A.V.C.
(*Director, Serum Institute, Ministry of Agriculture, Egypt.*)

It is a well-recognised and indisputable fact that large numbers of human beings suffer, and many die each year, from diseases directly due to contagion contracted by some means or other from the domestic animals.

There appears to be no reasonable doubt that the only means of restricting these conditions—even if total prevention is still too far off

* Moussu and Dollar.—"Diseases of Cattle, Sheep and Swine," London 1905, p. 292.

to be dreamed of at the present time—is a better co-operation between the medical and veterinary professions.

Each has its own part to play, neither can take the place of the other, yet we still have some " die-hards " left, who consider, on the one hand, that the veterinary profession—even if worthy of the name of profession—should be entirely subordinated to the medical ; and, on the other hand, that the veterinary profession is entirely distinct from its colleague, the medical, and has nothing to learn from it.

Fortunately, the tendency is now for a much better mutual understanding between the " sister sciences," and it seems as if these " die-hards " would finally succumb.

I have selected a few animal diseases met with in Egypt liable to be contracted by man, and in some cases which are responsible for many human deaths.

These conditions are not specific to Egypt, many being only too well known elsewhere, but a few facts about them as they occur here may be of interest.

Anthrax.

As is to be expected, this disease is of fairly common occurrence, though fortunately it has never assumed the serious proportions that it sometimes does in other hot countries.

The number of cases vary much ; for instance, in 1913 there were 544 cases reported as occurring in animals in Egypt, including those occurring in the quarantine parks, while in 1920 only five cases were recorded. The cases in man are also subject to considerable fluctuations, and from time to time serious outbreaks have occurred.

Strict veterinary inspection, bacteriological examinations of all suspicious deaths and careful quarantine measures against imported cattle and sheep have done a very great deal to keep it down in animals, and so, doubtless, have been instrumental in checking its spread amongst the people.

As illustrative of the help that the veterinary surgeon may be to doctors, the following cases may be cited.

Some years ago, an outbreak of anthrax in some of the inhabitants of a certain village assumed considerable proportions. These cases came under the notice of the medical authorities who instituted preventive isolation and quarantine with the necessary treatment amongst the affected people.

It was noticed that most of the fatal cases occurred amongst the old women of the village and that they suffered from the pulmonary form of the disease. A few cases occurred in children, who had malignant pustules on the arms and in some cases on the legs, or even on

other parts of their bodies. The explanation of this difference was not at once apparent.

Although no cases of the disease had been reported in the neighbourhood amongst animals, nevertheless a member of the veterinary staff was sent to the village to make enquiries. He found that both cattle and sheep had been dying and also that a number of sick animals had been slaughtered illicitly, and was very soon able to diagnose that anthrax was present and had been the cause of the deaths and illness both in the cattle and the sheep. Incidentally, it may be stated that the last thing an Egyptian villager, or "fellah," will do is to report the presence of a disease unless absolutely compelled to do so, which of course makes the task of the veterinary inspector a very much harder one than need be.

The course of the symptoms seen in the villagers was then made clear, and was as follows :—It is the custom of the people in the villages to collect the dung from the cattle and make it into round, flat cakes, like "flap-jacks," and spread it out to dry in the sun, in order to be used as fuel. This is usually done by the children. When dry, it is broken up and used for cooking purposes. The cooking is done mostly by the older women (the younger ones being out at work in the fields). The children collecting the moist dung, much of which was from sick cattle, were not so much exposed to infection, owing to the moisture, but occasionally contracted malignant pustules through abrasions ; but the old ladies of the village, who broke up the sun-dried "cakes," and talking, as usual, all the time while at work, inhaled the dust rich in spores, and so fell ready victims to the pulmonary form of anthrax.

On another occasion a veterinary inspector was inspecting a village where he knew anthrax existed amongst the animals. On passing a large heap of "tibn" or chopped straw, he noticed something moving, and on investigating the cause, he found a man hiding himself in the "tibn."

This man turned out to be very ill and to be suffering from an acute form of pulmonary anthrax and was hiding himself, fearing that the veterinary inspector was the doctor, and would put him into hospital. This case would in all probability have gone undiagnosed had it not been for the veterinary inspector.

Yet another incident. On a large estate, a "beast" had been ailing and was slaughtered. As the meat appeared to be in none too good a condition, the manager, being an enlightened man, sent for a veterinary surgeon. This veterinary surgeon, who happened not to be a Government man, diagnosed anthrax and had the carcase destroyed.

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A Government veterinary inspector was sent down to investigate, but found no more cases and the specimens taken had not been kept.

A few days later another cow died, and again the local veterinary surgeon diagnosed anthrax and had the carcase destroyed, but by some error for the second time the specimens were not preserved for verification. Again, on the arrival of the Government veterinary inspector, no further signs of the disease could be found and the cases could not be confirmed. This inspector then asked to see all the cattle-men of the farm, and examined them to see if any were ailing. On enquiry he found one man to be absent and he was found lying up in a loft, as he had been suffering from a sore arm. The inspector insisted on examining this man, and found that he had a large dark-looking pustule on his forearm, which he suspected to be a malignant pustule. The veterinary inspector reported the case to the medical authorities, who immediately had the man sent to hospital. It was ascertained that the patient had been under treatment by a local Egyptian doctor, who had treated him for a " carbuncle," but it was then found that the so-called " carbuncle " was actually due to anthrax.

A subsequent case amongst the cattle finally allowed a bacteriological examination to be carried out. This confirmed the outbreak to be anthrax as stated by the local veterinary surgeon, although the finding of the malignant pustule in the man had been taken to prove the presence of anthrax for all practical purposes.

GLANDERS.

The comparative rarity of proved cases of this disease in man and the necessity of bacteriological examination for arriving at a certain diagnosis, probably lead to many cases being passed over unrecognised. This is only to be expected where, in a country with a dense native population, supervision of disease is so difficult ; and I am unable to find any figures dealing with human glanders in recent years.

One feels sure, however, that were the disease in the horse allowed to become rampant as before, in the thickly populated towns where man and beast are so intimately mixed up, many human cases would occur.

No little credit is due to the veterinary services of the country, Government, municipal and quarantine, for nearly stamping out this disease in Egypt. This has been done by the continued and systematic use of mallein, combined with careful supervision.

Twenty years ago glanders was rife in Cairo and Alexandria, but in 1919 only 106 cases were recorded in the whole of Egypt ; in 1920 60 cases, and last year the figures showed a very much greater diminution. Considering the number of Army horses sold during and since the war, these figures speak for themsleves.

Ten or fifteen years ago it was a very common thing for a horse-owner to find his horse or donkey dying from acute pulmonary glanders and farcy, and to avoid official enquiries and disinfection, to turn this animal out loose into the streets of the city to spread disease both to man and beast. It is now a long time since such a case has occurred, and to the veterinary profession this change is chiefly due.

TUBERCULOSIS.

The question as to how much human tuberculosis is due to animal infection is still in a state of debatable uncertainty. The conditions with regard to this disease in Egypt differ but little from those existing in other countries.

Egypt has often been called the "Land of Paradox," but it is refreshing to find that everything in it is not paradoxical, for all the abattoirs are under the supervision of the veterinary profession, either Government or municipal. This is indeed a step in the right direction, for the state of meat inspection in the country, I can say without fear of contradiction, compares very favourably with that of many countries more advanced in other ways.

A large quantity of tubercular meat is condemned before it reaches the consumer, and I find that in the year 1920 3,939 carcases were destroyed in whole or in part owing to tuberculosis. Much still remains to be done with regard to improving the system of milk inspection, but we must console ourselves with the proverb that "One must creep before one can walk." In the same year, 2,995 persons are officially stated to have died from some form or other of tubercular disease.

Speaking of tuberculosis brings to mind a statement I have often heard, especially since British co-operation in this country has been so much criticised in recent years. It is stated by certain Egyptians, that Europeans—to wit, especially the British in particular—are responsible for introducing tuberculosis into the country. This is based on the fact that many Europeans suffering from the disease come to winter in such places as Assuan and Heluan for reasons of health. We may be comforted, however, by the findings of that eminent Egyptologist, Professor Elliott-Smith, who states that he has found tubercular lesions, such as tubercular ostitis in Egyptian mummies many thousands of years old. Whether lesions have been found in mummified oxen I cannot say.

The following incident shows how veterinarians can aid their medical brothers in the diagnosis of even such a well-known disease as tuberculosis.

Some years ago, before the war, the British garrison in a certain town in Egypt was being issued with Australian mutton from a cold store, supplied by a contractor. In some of the meat issued, it was

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found, after cooking and cutting it up, that there were some cheesy circumscribed areas in connection with deep glands. This was complained of by some of the men, and was duly reported to the A.S.C. (it was before this Corps became "Royal"). The A.S.C. officer called in the medical officer, who suspected the cause to be tubercular. Similarly affected meat from the same supply was sent to a certain medical bacteriological laboratory (this was not a Government one), for examination and report.

Rabbits and guinea-pigs were inoculated with suspected material and developed cheesy abscesses at the seats of inoculation, along with nodules in the lungs and liver. Without further confirmatory evidence this laboratory gave a verdict of tuberculosis. The issue of the meat was consequently stopped, much to the annoyance of the contractor.

The latter came and complained to the Government Veterinary Laboratory, stating that his meat had been unfairly condemned. He sent parts of the carcase of a sheep showing lesions similar to those complained of to the said laboratory for investigation. This was carried out, and, to make a long story short, the lesions were proved to be those of caseous lymphadenitis—one of the so-called "pseudo-tuberculosis" and due to the Preisz-Nocard bacillus.

As no human lesions have ever been demonstrated as due to this bacillus, the meat would have been perfectly safe for human consumption after extirpating any local lesions.

Due representation was made to the authorities concerned, with the result that the contractor had the satisfaction of continuing his contract, and apparently everyone was satisfied.

Rabies.

Probably no more terrible disease than this exists, though luckily it is not so common as many others.

In Egypt, both the medical and veterinary services are working loyally side by side to lessen its ravages, and in a country like this, where so many stray and uncared-for dogs and cats exist, not to mention wild carnivora, the struggle is an unending one, and in many cases a most thankless task.

In Cairo there is an Anti-rabic Institute run by the medical service. At this institute, in the year 1920, 1,228 persons were treated by the Pasteur treatment or its more recent modifications. In the same year, 26 persons are stated to have died from hydrophobia, but in only nineteen of these was treatment tried. In the same year, 82 cases were diagnosed in animals—73 dogs, 1 cat, 3 wolves, 1 horse, 1 donkey, 1 buffalo, 1 goat, 1 rat. Whenever any person or animal is bitten, no matter how trivially or in what manner, the case is reported, search is made for the animal causing the bite, and unless it is

absolutely unpreventable, the said animal is not allowed to be destroyed.

This animal is handed over to the veterinary inspector of the district and kept in strict isolation in special cages or boxes until diagnosis is confirmed or contradicted. All animals that die from whatever cause while still under suspicion have their brains removed by the veterinary surgeon, who forwards them to the Anti-rabic Institute for confirmatory diagnosis. Naturally, a large number of biting animals escape capture, and the patients bitten are treated as a precaution, in which event the case becomes a purely medical one. Likewise, also treatment is carried out on bitten persons when the biting animal dies from any cause and diagnosis is uncertain. The Veterinary Service also takes special means to destroy stray dogs in all areas where rabies has occurred or where there is any suspicion of it.

In the same year mentioned above, the following animals, having bitten people in Cairo alone (I have not the figures for the rest of the country), were handed over to the Veterinary Service for observation : 225 dogs, 11 cats, 10 monkeys, 2 foxes, 1 cock, 15 horses, 3 donkeys, 1 mule, 1 lamb.

The veterinary services were also responsible, with the aid of the police, for the destruction of 57,907 stray dogs and cats in Egypt in the same period.

The Veterinary Service is in daily communication with the Anti-rabic Institute, and the smooth working of the system could well be taken as a model by others.

Malta Fever.

This disease is yet another which the human being can be guarded against by suitable veterinary advice. Although several animals are susceptible the goat is the only one of practical importance.

As very large numbers of goats are used for milk in Egypt, a general spread of the disease in this animal would be very serious from a public health point of view. Though Malta fever in man is rarely fatal, it is nevertheless a very long and troublesome type of fever, and one to be guarded against by all means possible.

The disease has recently come greatly into prominence owing to the similarity discovered between its causal organism and that of contagious abortion of cattle. Further investigations are being carried out in this direction, and no one can say but that further facts may be elucidated in this line, that may be of paramount importance to the human race.

Large numbers of goats have been destroyed in the country after a positive diagnosis by veterinary inspectors as suffering from an infection of the micro-coccus melitensis. It has been found that the

disease is luckily rare in the interior of the country, being most common in Port Said, where incidentally it may be remarked, there are the largest number of Maltese goats.

The Veterinary Laboratory staff is constantly being asked to examine specimens of goats' blood by means of the agglutinisation test, for would-be purchasers of goats. The veterinary staff is well versed in taking the necessary specimens from goats for this purpose.

MANGE.

The transmissibility of certain types of mange from animals to man is now too well-known to need recapitulation here, but the field of study is one in which the close collaboration between the two professions is of the greatest importance. The infectivity of equine and of canine mange to the human race has often been demonstrated, but during the late war many instances of camel mange, due to sarcoptes scabei, var. cameli, being infective to man, occurred.

The writer of these notes was in command of a large camel veterinary hospital, and the treatment of camel mange was one of the most important and also exacting of tasks. As a rule, during the busy periods, 30 camel clippers were employed to clip all camels coming into the hospital. At one period of the campaign the camels were sent in to the hospital in large batches of 300 or 500 at a time, and often a couple of hundred of these were suffering from generalised mange from head to foot. On such occasions the clippers always became infected.

The symptoms were : itching of the affected part with the formation of an inflamed area in size from a pin's head upwards. In many cases the whole body became infected and the itching was intense. The symptoms commenced a day or two after handling the infected camels. If untreated the affection died away in four or five days, but while it lasted was highly contagious to other persons. It was a common thing for those clippers who lived at home to complain that their wives and families were all affected with the same condition, especially after the arrival of a specially badly affected batch of camels. The writer has often had the children of the affected men brought to him for treatment, showing all the signs noted in the camel clippers.

Treatment consisted in washing the parts affected with hot water and rubbing in sulphur ointment or sulphur and oil, when in a few hours an amelioration occurred and the eruption soon died down.

The writer himself was twice similarly affected, on the arms and chest, and can vouch for the intense irritation produced.

Undoubtedly the clippers were more affected than others, as they had to remove the hair before anything else could be done to the camels, and so had the most chance, but the camel dressers who scraped the

skins after clipping prior to dressing also came in for their share of this mange, and to a lesser extent the camel *saices*.

Many men up the line were treated in the hospitals, and the medical reports confirmed the diagnosis of scabies.

The infectivity to man was a well-known fact to all officers who had to do with the Camel Corps, and the cases quoted were by no means isolated ones.

VARIOLA (CAMEL POX).

Another disease infective from animal to man and brought prominently to notice in the Egyptian campaign in the late war, is camel pox. This is a true form of variola and is very common in the camel. It is usually a mild disease, but during the cold winter months the lesions may become confluent and produce death.

Ample evidence was forthcoming of its infectivity to human beings under certain conditions, though the transmission never became a common one. Camel saices and dressers now and again became affected on the arms, legs, or even on the bodies. The lesions caused were very similar to those of vaccinia in man. The affected part became very hot and tender and had a " drawn " appearance, a papule formed at the centre became pustular, and finally healed up under a scab in the usual manner.

Many cases were treated by the R.A.M.C. in hospitals, but were usually of a mild type, with little or no febrile symptoms, and as far as the writer is aware, never proved fatal. Personally, only two cases came directly under the writer's notice, but the condition was one which might well have defied correct diagnosis had not the history of the cases been known and the disease proved in the camel first.

This is, however, another instance that close collaboration between the two professions is still necessary to elucidate certain facts about its transmission to man, the course it takes and if it produces any immunity against human small-pox.

During the war opportunities may have been plentiful, but owing to the rush and stress of the work, it was often impossible to take full advantage of them.

Mr. F. E. Mason, Veterinary Pathologist to the Egyptian Government, carried out certain experiments which showed that camel pox was non-infective to calves and to buffalo calves. He also found that lymph prepared from buffalo calves for vaccinating human subjects, the usual method of preparation in Egypt, was non-infective to the camel. It is to be hoped that further experiments may be undertaken in future on the same lines.

In the above notes, the writer has not aimed at producing anything original, nor can he pretend that the subject has been treated in a

highly scientific manner. A few plain facts have been set forth which should go far to prove the great benefit which would accrue to both medical and veterinary sciences and to the general public, from closer co-operation—if, in fact, any further proof is needed in such a self-evident case.

THE RESPONSE OF THE GUINEA-PIG TO THE SUBCUTANEOUS INJECTION OF LYMPHADENOMATOUS AND SARCOMATOUS TISSUES.

By C. C. TWORT, M.D.,
Rose Research Fellow, St. Bartholomew's Hospital.

WHILE carrying out some infection and immunity experiments on lymphadenoma it was observed that, among laboratory animals, the guinea-pig frequently reacted to the subcutaneous injection of pieces of tissue by the production of a local nodule, while rabbits and mice gave no such reaction. Bacteriologically sterile, local nodules were produced by the injection of fresh lymphadenomatous tissue, or similar material preserved in pure glycerine, 50 per cent. glycerine in saline, broth and saline, in cold storage, for as long as 15 months. Organs from cases of myelocytic leucæmia, *viz.*, lymphatic glands, spleen and liver, were also capable of exciting a local reaction in the guinea-pig, but not in the rabbit or mouse; and less certain results were obtained with lymphatic leucæmia and pernicious anæmia material.

A number of experiments with tissues obtained from cases of carcinoma and sarcoma of various varieties were always negative, the material being collected from man and dogs. On the other hand, a mouse sarcoma which was kindly given to me by Dr. Murray, of the Imperial Cancer Research Institute, I have found to produce a local nodule with more certainty than any other material up to the present utilised, although being a little later in making its appearance.

The mouse sarcoma nodules can be palpated by the third or fourth day, enlarge up to about the ninth day, and then gradually disappear. With lymphadenoma, etc., they are usually evident on the first or second day, and, as a rule, adsorption commences somewhat earlier than with the mouse sarcoma. Tumours produced by lymphadenomatous or leucæmic tissues, on section, appear to be entirely of an inflammatory nature, but with the mouse sarcoma there is definite multiplication of the sarcoma cells, and what is more, an excised nodule is capable of infecting mice after having remained for at least 14 days in the guinea-pig. The mouse sarcoma nodules, in the guinea-pig, consist of the central mass of sarcoma cells surrounded by a thick layer of inflammatory tissue, and it is only the central

portion which will infect mice. Transplantation of the inflammatory or sarcoma tumours from guinea-pig to guinea-pig has, up to the present, invariably failed.

Tumours collected from mice which had been infected with a nodule from a guinea-pig have been re-injected into guinea-pigs, from which animals they were excised and again transplanted into mice. Attempts are being made, by repeated cross passages, to augment the virulence for the guinea-pig, but it is at present too early to note any appreciable change of virulence. Also other channels of inoculation are being utilised, and efforts are being made to sensitise the guinea-pig. It is, of course, probable that no acclimatisation for the guinea-pig will be obtained, and that the phenomenon will prove to be similar to that of Ehrlich's early experiments of the transmission of a virulent mouse sarcoma to rats and back again to mice, with an inability to transmit from rat to rat. His theory of "Athrepsic immunity" could then also be applied to explain my results.

The mouse sarcoma tumour, kept for longer than a few hours, in pure glycerine, in cold storage, fails to infect mice, and similar material injected subcutaneously into guinea-pigs excites no reaction. This is interesting, as we have mentioned above that lymphadenomatous and leucæmic tissues are capable of leading to the production of a local nodule, even after many months' preservation in glycerine. It is probable that these nodules are produced by toxines present in the injected tissues, although it is strange that a filtered emulsion of the cells leads to no nodular formation. Also incubation of the lumps of tissue with certain sera renders them innocuous, and it may be noted that rabbit's serum has a greater neutralisation effect than has guinea-pig's serum, which was to be expected seeing that these tissues cause no reaction in the rabbit.

The fact that the mouse sarcoma cell or virus remains alive, and apparently multiplies, in a host so far removed as a guinea-pig, would seem to be of a certain amount of interest. That it is destroyed rapidly in glycerine was to be expected, although glycerine is a much weaker preservative than appears to be recognised generally. Most ordinary bacteria will live for a short while in this substance, while filter-passing viruses and acid-fast bacilli as a rule resist it very well. I habitually utilise glycerine for the isolation and preservation of acid-fast bacilli. It will be unnecessary, however, in this preliminary communication, to discuss the mechanism of these reactions in the guinea-pig, further experiments being required to throw additional light on the matter.

XUM

Clinical Articles.

A SEVERE INJURY TO THE TRACHEA AND ŒSOPHAGUS.

By F. L. GOOCH, F.R.C.V.S.,
Stamford.

On July 24 a cob was brought to the infirmary with a deep wound in the front of neck, about 7 inches below the larynx. Upon examination I found that breathing was taking place through a wound in the trachea, and I was able to insert my fingers between the trachea and the large vessels of the neck. I dressed the wound with antiseptics and syringed it well out.

On seeing it again on the 25th I found that food was passing out of the wound, and it gave out a very fœtid odour, and upon further examination I found I had a wound in the œsophagus as well as the trachea to deal with, and as both the carotid artery and jugular vein were laid bare, I was very suspicious that the coats of the vessels might be involved.

Upon inquiry I found the animal was at work on the Saturday, turned in the grass field at night, and was only seen by a boy on the Sunday, and was found in the condition I saw it on the Monday morning by the owner.

I explained to the owner the seriousness of the injury, and gave a very guarded prognosis. The animal was brought to the infirmary daily and I dressed it myself.

On the morning of the 29th a piece of the mucous membrane of the œsophagus, about 2½ inches in length, and quite circular, corresponding to the inner surface of the œsophagus, sloughed away and with it a large quantity of fœtid, smelly food, and when I allowed the animal to drink some water, apparently the whole came out of the wound. I was afraid I had a complete severance of the œsophagus transversely, and gave the owner very little hope of recovery, but continued the syringing of the wound with antiseptics. At this time there was considerable swelling around the wound.

At this time the wound in the trachea had completely healed.

On August 5 a swelling appeared immediately in front of the larynx, and this swelling burst on the 10th and a large quantity of half-masticated food came away. I now found I had a fistula between the upper and lower wounds, and was able to syringe the dressing from top to bottom, and *vice versa.*

From this time the lower orifice began to heal very quickly, and less and less food passed away, so I came to the conclusion that I had still a part of the œsophagus in contact, and that a certain amount of food passed into the stomach. This opinion was confirmed by the

animal, which had become emaciated, recovering some of its condition, and although I had the opinion of several veterinary surgeons that the case was hopeless, I continued treatment and had the satisfaction of seeing both orifices gradually healing and more food passing into the stomach.

I now dressed the wound only every other or third day, and at the end of August no solid matter passed out of either orifices, but water after drinking came out in small streams from both wounds.

The lower orifice was the first to quite close up, and I was much afraid that I should have an accumulation of water, etc., in the fistula ; but on September 13 both wounds were healed and I had only slightly thickened condition the whole length of the fistula.

The animal had now recovered his condition, and was sent on the 16th to do gentle work, having made a complete recovery.

I saw the owner a few days since, and was told that the pony was working satisfactorily.

TREATMENT OF PERSISTENT DEBILITY IN AUSTRALIAN HORSES DUE TO HABRONEMIASIS AND STRONGYLOSIS BY MEANS OF THE SINGLE STOMACH TUBE.

By Major H. ALLEN, R.A.V.C.,
Remount Depot, Saharanpur, India.

Since writing my article on " Saline Treatment in Cases of Debility, etc., by Means of the Single Stomach Tube " in the Veterinary Journal of October, 1921, pp. 384-387, I have been making efforts to perfect the treatment.

I owe the success of my recent experiments to the valuable suggestions of Major T. Lishman, R.A.V.C.

I now classify my debility cases under three headings :—

(1) *Constitutional*—non-acclimatisation, dietetic, nervous, and after-effects of debilitating diseases, such as pneumonia, etc.

(2) *Specific*—surra. piroplasmosis, dourine, glanders, etc.

(3) *Parasitic*—which is a prominent pathological feature in all animals, the gastro-intestinal tract forming the main entry to parasitic invasion for other parts of the body.

Generally speaking, those infesting the stomach are *Habronema megastoma* (pyloric region), *H. muscæ* and *H. microstoma* (cardiac portions), one or all causing serious lesions. The tumours formed by the *H. megastoma* results in non-functioning of the part or parts affected. *H. muscæ* and *H. microstoma* set up a chronic mucogastritis, and may be associated with ulceration. The result of chronic gastric catarrh is that the digestion of the stomach is imperfectly performed and the

ingesta enters the intestine in an unfit condition, nutrition becomes deficient, products of imperfect digestion become absorbed, and the condition of the animal suffers.

A point which has often struck me on post-mortem examination is the comparatively small size of the stomach *in situ*, giving one the idea of it being contracted.

Intestinal Parasites.—Sclerostomum equinum (palisade worm); *Sclerostomum edentatum* (palisade worm); *Cyathostomum* (*Cylicostomum*) *tetracanthum.*

I venture to say that my experience of debility cases amongst Australian horses tends to show that 60 per cent. are due to habronemiasis, 20 per cent. to strongylosis (sclerostomes), and 20 per cent. to constitutional causes.

Advanced habronemiasis and strongylosis may run hand in hand.

It must be remembered that it is not very difficult to demonstrate sexually mature sclerostomes in the large intestines in any post-mortem, but they may not be in sufficient numbers to cause any ill-effects.

Some writers do not believe in embolic colic due to parasitic aneurism of the mesenteric artery caused by the palisade worm for the following reasons: that the vessel may be extensively diseased and have never suffered from colic; and that the ass is practically never free from invasion by the palisade worm of the mesenteric arteries, and appears to possess immunity to colic.

I am not in agreement with above, as I have seen many cases amongst Argentine mules, and a few affecting countrybred and Australian horses. Embolic colic is always associated with parasitic enteritis.

I can bring to memory two cases of embolic colic—one in a countrybred horse, the other in an Argentine mule—in which death was finally caused by internal abdominal hæmorrhage due to rupture of the aneurism.

Routine Procedure in Debility Cases.

Two or three pellets of excreta are taken from a debility case, placed in a screw top glass jar, wrapped in dark paper to keep out the light, and kept for two or three days in a warm room. After above interval the surface of one of the pellets is scraped over by means of a scalpel and spread out on a glass slide that has been previously warmed and moistened by having been dipped in warm water.

The smear is then examined under a $\frac{2}{3}$-inch lens, and after a few minutes' search the field may show numerous minute wriggling worms. If present, these are the larvæ of *Sclerostomum equinum* or *Sclerostomum edentatum*, and are hatched out from the ovæ passed into the bowel from adult worms fixed on the mucous membrane of the cæcum.

If the microscope gives me a negative result I assume that I am dealing with a case of habronemiasis, and adopt treatment accordingly.

STOMACH TUBE TREATMENT IN HABRONEMIASIS AND STRONGYLOSIS.

Starve for 36 hours. This is a very important point in the treatment. Pump into the stomach the following prescription :—

Formalin	1 to 2 ozs.
Spts. Turpentine	2 to 3 ozs.
Aloes Barb.	3 drachms.
Common Salt	6 ozs.
Ol. Lini	1½ pints.

The above is thoroughly stirred up in a bucket of warm water added to make the whole of it up to two gallons.

Allow water in the stable *ad. lib.* after administration of above.

Purging sets in after 12 hours, lasts for two days (in some cases you get profuse purging), and starts assuming the normal on the third day.

I keep the patient on bran mashes until the third day.

Nearly all the cases invariably show rapid improvement in condition in a week's time. Cases which hang fire I repeat the treatment after two or three weeks. I have often repeated the treatment as many as six times, increasing the interval between by about one week.

ADJUNCT TREATMENT IN "HABRONEMIASIS."

Three or four six-day courses of arsenical treatment at intervals of four to seven days.

I administer arsenious acid daily mixed with a small feed, or as bolus after a feed as follows :—1st day, 5 grains ; 2nd day, 10 grains ; 3rd day, 15 grains ; 4th day, 20 grains ; 5th day, 25 grains ; 6th day, 30 grains.

I have never had any untoward results.

All patients are watched carefully for any colicky signs, purging, tenesmus, distressed breathing, etc.

Administering arsenic as above in gradually increased doses, a tolerance of the drug is acquired, and this fact is important from a therapeutical point of view.

ADJUNCT TREATMENT IN STRONGYLOSIS.

Intravenous injections of one of the organic compounds of arsenic in the form of atoxyl. The injections are carried out at intervals of 10 to 14 days, according to the progress of the cases, as follows :—

1st Injection.—10 grains of atoxyl in 1 pint of normal saline solution (80 grains of sodium chloride dissolved in 1 pint of boiled water).

Interval of one day.

2nd Injection.—20 grains of atoxyl in 1 pint of normal saline solution.

Interval of one day.

3rd Injection.—30 grains of atoxyl in 1 pint of normal saline solution.

Interval of one day.

4th Injection.—40 grains of atoxyl in 1 pint of normal saline solution.

Interval of 10 to 14 days.

As a precautionary measure a small quantity of normal saline solution is passed through the special hypodermic needle after the injection, before its withdrawal from the jugular vein, to obviate injury to the intima and subsequent thrombosis.

I use a simple, inexpensive and easily sterilised contrivance for jugular work in the shape of a 4 to 8-oz. glass human enema funnel, to which is attached about 8 inches of red rubber tubing, at the end of which is a metal nozzle adapted to the jugular needle.

Habronemiasis Prophylaxis.

As the life-history of this disease is connected with the common house fly (*Musca domestica*) and the stable fly (*Stomoxys irritans*), owing to infection of forage or water supply, by ingestion of the mature fly, every precaution should be taken to eradicate them. I allow no fresh dung to become collected in the lines, private stables or hospitals. All fresh manure is carted away daily and buried in specially dug pits on the "farm," which always contain fermenting manure (Robaud's method).

This procedure destroys the larvæ of the habronema, and the fly maggot, and is easily carried out in a remount depot.

Hemotoxins, Secreted from Parasitic Worms.

Certain parasitic worms secrete substances that affect the blood of the host deleteriously. These substances, which may be designated as hemotoxins, are in general non-specific in that they are also active toward blood of animals other than their normal host. Worms of the genus strongylus secrete a hemolysin and an anti-coagulin. The hemolytic principle of these parasites is apparently an alkaloid, although other substances found in them show hemolytic power.

DISLOCATION OF TIBIO-TARSAL ARTICULATION.

By Major J. R. HODGKINS, D.S.O., F.R.C.V.S., R.A.V.C.

This is apparently a rare accident and merits record.

The present case occurred in an old English polo pony. There is no history except that it was found in the morning with the off hind leg swollen extensively around and above the hock. The toe was

turned inward, and the point of the hock was rotated markedly outward. Handling of the limb was resented. There were no marks of violence on the limb at all.

The animal was brought to hospital in a float, carefully cast, and chloroformed. No fracture could be detected, but it could be identified that the articular surface of the tibia had quitted the trochlea of the astragalus. By stretching the limb this could be replaced, but immediately became disarticulated. The owner consented to the animal's destruction.

Post-mortem examination revealed that the external lateral ligament was completely severed. The internal lateral ligament was almost completely severed. The whole of the joint capsule was torn from its tibial attachments, bringing with it a piece of the anterior face of the distal extremity of the tibia.

A tragedy of the night, without explanation.

TWO CASES OF DESCENT OF THE INTESTINE AFTER CASTRATION, AND A RECTAL MANUAL METHOD OF REDUCTION.

By C. H. SPURGEON, M.R.C.V.S.,
Petworth, Sussex.

Case 1.—A yearling cart colt. No signs of scrotal hernia before operation. Colt thrown with side lines and testicles removed by the ecraseur. After being allowed to rise, descent of the small intestine through the left scrotal incision took place immediately; sufficient to fill a gallon measure. Colt was re-thrown and placed on the middle of his back. The exposed intestine was kept free of dirt, etc., by damp towels; one towel was placed around the scrotum, and the bowel rested on this. I at once inserted my right hand into the rectum as far as the inguinal canal, and by traction on the intestines in a downwards and forwards direction gradually returned the whole of the intestine. The wounds were not sutured or plugged. The colt was allowed to rise, and made a complete recovery.

Case 2.—A two-year-old half-bred shire cryptorchid, with the left testicle retained. Operation performed quite successfully. On the fourth day after operation the colt was a trifle restless, but feeding well, and temperature 101°. On the fifth day two sutures in the middle of the wound were removed. A quantity of serous exudate gushed out, and almost immediately a knuckle of small intestine protruded. The colt was in a big loose-box, being held by my groom with a halter. I did not use a twitch or hold a foot up: simply inserted my lubricated hand and arm into the rectum as far as the inguinal canal, and by lifting and pulling backwards and upwards reduction took place in

about a quarter of an hour. To make sure the whole of the intestine was returned into the abdomen, I passed the flat of my hand in a sweeping action from left to right across the inguinal ring. The external wound was treated in the usual manner and the remaining sutures removed four days later. The colt's temperature was never higher than 101·2/5, and the appetite was maintained all the time. The animal was sent home a fortnight after the operation, and has been turned out, making a complete recovery.

RETENTION OF THE PLACENTA IN THE MARE.

By Wm. LOTHIAN, M.R.C.V.S.,
Duns.

It is the unanimous opinion of all veterinary surgeons that when a mare foals and the placenta is retained it ought to be removed early. I have heard some say not later than six hours, and I have heard others say not later than twelve hours. But I think in warm weather twelve hours should be the outside limit that the placenta be allowed to be retained, and a shorter time would be better. The consequences of retention in the mare over a certain time are serious and disastrous, if not fatal. Removal is rarely a difficult matter, but cleanliness is absolutely essential. The tail should be tied round out of the way, and the external parts washed with soap and warm water, to which a little lysol or other suitable antiseptic has been added. Generally some of the attached portion is separated and is outside, and to this gentle traction will be applied with one hand, while the other may be introduced and the uterus gently separated from the placenta as long as within reach. Usually some portion is unattached and comes away freely. Care is required about the end when it may be necessary for an assistant to hold up the removed part and lessen some of the weight to prevent breaking. When removed the placenta is whole, and not broken.

An unusual case occurred on July 19 last, when I received a message to attend a pedigree Clydesdale mare that had foaled a healthy colt foal nearly a fortnight over her time, but had not cleaned. I cleaned this mare three years ago, when removal was easily effected. This time only the cord was outside, and so much of placenta attached that some difficulty was experienced in getting a start, and although the mare behaved splendidly removal was tedious and slow. Eventually I got it away (or detached) except a portion that proved subsequently to be little larger than the surface of a man's hand. Beyond this I could effect no further removal. I could not reach to separate, and further traction could only end in tearing the uterus or breaking the placenta. Had the latter not been very much stronger and tougher

than usual it would have given way before, as I am certain the force used was very much more than an ordinary placenta could stand without tearing. I now decided to leave it, and to lessen risk of infection cut off close to vagina, when it slipped in. I went back at night and injected a solution of boric acid into uterus, syphoned off all fluid, and introduced a pessary (1 oz. size gelatin capsule), Boric Acid and Iodoform. This treatment was repeated on the 20th and 21st, along with unsuccessful efforts at removal. On the 22nd, three days and 12 hours after foaling, the placenta was wholly removed after a further determined effort. The uterine treatment was carried out on this and the next day, after which the uterus seemed normal and no further treatment was necessary. During all the time the mare appeared quite healthy, fed well, and showed no bad effects of her experience, although I think it unlikely that she would have tolerated it any longer. Retention for three days and a half shows the value of cleanliness and antiseptics. The mare went to horse on the 29th, and owner is hopeful she is in foal again.

In the year 1914 I had a case which I could not remove for two days, and one last year which I had to leave for 24 hours. Both cases were easily removed at these times, and showed no ill-effects.

AN OBSERVATION ON OVARIOTOMY IN THE MARE.

By T. M. INGLIS, M.R.C.V.S., J.P.,
Forfar.

Subject.—Four-year-old Clydesdale mare of a vicious temperament.

Cast, chloroformed, and parts prepared. Vagina, os and other structures appeared normal. I introduced in my hand the concealed knife, and, finding the correct part to make the incision, I unsheathed the blade, forced it into the part selected, bringing the movement downwards, and just as I introduced the blade the vagina contracted on my arm, which must have caused the accident I am about to refer to.

Quite unaware of any damage having been done other than the incision in the wall of the vagina, I began to introduce the fingers to dilate the wound, when the os and the upper part of the uterus split, and, instead of my hand going into the abdomen, I found it had gone into the uterus.

On discovering this I immediately withdrew my hand, and discontinued the operation. I swabbed the wound and packed the front of the vagina with iodoform wool to prevent the contamination of the wound in the uterus, and the mare did well enough.

Although the accident may be an unusual one, I consider it well worth recording, as it is by mistakes such as the above that we are able to warn our younger men when operating.

I must have cut the upper portion of the os when making the downward movement, clearly showing the danger of going too near the os, as well as going too high, with a possibility of wounding the bowel or the more important blood vessels.

This accident has taught me a lesson which I trust I may be able to warn others against. I mean to operate on the subject again in due course.

I operated on this mare in consultation with Mr. Hood, M.R.C.V.S., Montrose.

TWO CASES OF HÆMATURIA OF OBSCURE ORIGIN IN THE HORSE.

By HENRY TAYLOR, F.R.C.V.S.,
Examiner to the Royal College of Veterinary Surgeons.
Haywards Heath.

THE disease in the horse known as hæmoglobin and azoturia has a very definite symptomatology, and its etiology, if perhaps not fully understood, has one or two outstanding features. The two cases which I am about to describe were quite distinct from the disease called hæmoglobinuria, with the single exception that the urine contained either blood or hæmoglobin.

Case 1.—The subject was an aged gelding employed on a farm. He was in constant work, and about two o'clock one day in May, whilst ploughing, he was noticed to pass bloody urine, but as he did not seem at all upset or inconvenienced he was kept at work until leaving-off time at 4 p.m. Next morning he was worked as usual, but the owner, observing that he was not quite himself, suspected a colic attack, and sent in for a colic draught.

Later in the day I was requested to see the animal, which I did about 4.30 p.m. The patient then seemed rather distressed, but there was no sign of colic, and the draught had not been administered. Upon examination the temperature was found to be 104, the pulse about 70, with tumultuous heart beats. The breathing was deep and laboured. The breathing simulated that of broken wind to a certain extent, but I was informed that the horse was all right in that respect. It was at this period that the circumstance of the blood in the urine was narrated to me, so a request was made that a sample be obtained for inspection. There was no suggestion of any hardness of the muscles in any part of the body, and there had been no sweating. Next day the sample of urine seemed to be composed of *almost pure blood*, and the horse continued to pass such for two or three days. It then became less like blood and more like urine, and the horse finally recovered. The point one wishes to emphasise is that the cause was indeterminate. It was not an ordinary case of hæmoglobinuria, nor

was it a case of vesical calculus, for a rectal examination revealed nothing there. Neither did the food seem to be a factor, as an examination of the pasture where the animal had grazed indicated nothing unusual.

Case 2.—This occurred within a few days of the preceding. The subject was a farm mare on a place about seven miles from the other. The animal did not seem ill, but was off food and constipated. Again, the urine was practically blood, and it continued in a like state for some days, when the mare gradually got better.

Excepting the state of the urine, no symptoms of hæmoglobinuria were present, and one was at a loss to arrive at the cause. The ingestion of bryony was suggested, but it could not be substantiated.

A CASE OF PARALYSIS DUE TO PSAMMOMA.

By Capt. G. F. STEVENSON, M.R.C.V.S.,
Royal Army Veterinary Corps.

Subject.—Bay gelding, light draught, 13 years, height 15·2. Admitted from 80th Battery, R.F.A.

History.—The horse was brought to hospital on July 28, 1922, in a motor ambulance, suffering from partial paralysis of the off fore and off hind limbs. The toe clip of the off hind shoe was broken off, and there was evidence that the wall of the toe had been more or less dragged for some time. The Farrier Sergeant stated that for three or four months he had shod this foot with a shoe with a toe clip (instead of the usual lateral clips used on hind feet), and that always after a few days it was broken off from being dragged on the ground. The horse had, however, been doing work in a gun-team quite well. On the morning of the 28th this horse was grazing with other horses of the battery when another horse galloped into him and nearly knocked him over. Symptoms of paralysis then became so pronounced that the horse was with some difficulty got into an ambulance and brought to hospital.

Symptoms and Treatment.—Partial paralysis of the off fore and off hind limbs, the toes of the affected limbs being dragged on the ground. Sensation was little, if at all, affected, and no sign of fracture or other injury could be found. Intelligence was not interfered with, and no other symptoms were shown. The horse was given a physic ball, followed by a course of nux vomica and pot. iodide. On July 31 there was no improvement and a brain lesion was suspected. On August 2 the paralysis was getting worse, the near hind leg was also becoming affected, and the horse could only walk with difficulty, and was put into slings. On August 10 there was no improvement, and a further course of nux vomica and pot. iodide was given for a

week. On August 16 there was still no improvement in the symptoms, and the paralysis was, if anything, getting worse, and on August 28 it was decided to bring the horse up for casting as incurable. This was done, and the horse cast for destruction on September 9.

Post-mortem Examination.—This revealed the following lesions: A psammoma attached to the choroid plexus of the lateral ventricle in each side of the brain. These growths were about equal in size, and measured 1 inch by ½ inch by about ½ inch thick. The surfaces were brownish grey in colour, and smooth on their external surfaces, but felt shotty if pressed upon owing to the presence of small collections of crystals in their substance. The cut surfaces were gritty, and little groups of crystals could be seen. Scrapings of the cut surfaces mixed with a little water, and viewed under the ⅛th objective of the microscope, showed these to be typical cholester in crystals, which immediately dissolved on the addition of a little chloroform to the slide. About ½ oz. of cerebro spinal fluid escaped when the dura mater in the occipito-atloid space was cut into, but there was no excess of fluid in the lateral ventricles when these were opened.

Remarks.—The interesting feature of this case is that the paralysis, which had been slight and confined to the off hind leg, suddenly became much worse and involved the corresponding fore limb when the horse had received a violent jolt. It appears evident that some movement in the position of the psammomatous growths was brought about and so caused this sudden and pronounced increase of the paralytic symptoms of the right side limbs and more gradual of the near hind limb.

This is the first case of psammoma in the ventricle that I have met with in which the symptoms produced were those of paralysis.

FOREIGN BODY IN THE THORAX OF A COW: RECOVERY.

By C. W. CARTWRIGHT, M.R.C.V.S.,
Dyserth.

THE subject was a young cow recently calved and in poor condition, to which I was urgently called one evening. She showed evidences of great pain—grunting, wild appearance, high temperature, accelerated respiration and thumping heart-sounds, which could be heard 10 yards away. A few inches behind the left elbow was a painful swelling measuring roughly 3 inches by 3 inches. It was emphysematous, and resembled blackquarter to the touch, but having regard to the angry, tumultuous character of the heart-sounds, and the fact that this cow had received medicine for indigestion a fortnight previous, from which she had apparently recovered, I concluded that its cause was some foreign body which had since found its way into the chest cavity. I may

state that I did not see her during her first illness. As she was too poor to slaughter it was decided to treat, in the hope that it might again find its way between the ribs, the pleura at one point having evidently been already punctured.

At this stage I scarcely felt justified in opening the crepitant swelling, as nothing foreign could be felt. A strong magnet would likely have been of service, but such was not available.

Hot fomentations were applied and belladonna given in full doses. Although other sedatives were afterwards tried, belladonna was found to be the best drug for relieving the pain and steadying the thumping heart, so, in combination with digitalis, it was continued. Next day the swelling had increased and had lost its crepitant character. Fomentations by means of hot blankets were assiduously applied day and night to the now increasing swelling, when in due course it was opened. To our disappointment, although the pus evacuated (to the extent of a gallon) was carefully examined nothing foreign was found, and neither did a careful search of the cavity disclose anything. A strong steel magnet was now placed in the wound, but whether it had any effect is open to question. However, a couple of days later a strong corroded sharp piece of wire, nearly 4 inches long, was extracted without difficulty. Great general improvement was now observed, while under a course of strophanthus, nux vomica and pot. iodide the heart sounds gradually improved. The fluid which had undoubtedly, to some extent, collected in the pericardium became either absorbed or organised.

For a time a fistula remained and gave some trouble. It was only after the injection of a few doses of mixed vaccine (Stock) that it commenced to improve, and then soon healed. The cow was eventually fattened, and realised a good price.

The small proportion of favourable terminations to this generally hopeless condition is my reason for recording this case.

Reviews.

VACCINE AND SERUM THERAPY IN VETERINARY PRACTICE. By L. C. MAGUIRE, F.R.C.V.S. Crown 8vo. pp. viii and 127. Price 5s. net. Baillière, Tindall & Cox, 8, Henrietta Street, London, W.C.2.

IT is opportune that a further practical text-book on vaccine and serum therapy in animals should appear; and Mr. Maguire may be congratulated on having produced such a work. The contents, comprised in eight chapters, discuss immunity, phagocytosis, anaphylaxis, diseases produced by bacteria which secrete true toxins, diseases due to ultra-microscopic and microscopic organisms, chronic infectious

diseases and bacterial diseases of the central nervous system. The author claims that we have great freedom in applying biologics in the treatment and diagnosis of disease in animals, and that the serum we use is homologous, and for these reasons practitioners should take full advantage of the modern means of treating disease. A careful reading of the book shows that the author advances no impossible theories to back up his opinions. He takes a very clear and fair view of the position of inoculation as an aid to medicinal therapy in daily practice. His statements are judicious and concise, and the book will be a very useful one; and it has the advantage of text-book size and lack of diffuse verbiage. G. M.

A TEXT-BOOK OF THE PRINCIPLES AND PRACTICE OF VETERINARY MEDICINE. By DAVID S. WHITE, D.V.M., Dean and Professor of Veterinary Medicine in the Ohio State University, Columbus, Ohio; late Chief Veterinarian A.E.F. (France). Second Edition, thoroughly revised. Price $4.75. Pp. 504. Publishers: Lea and Febiger, 706-10, Sansom Street, Philadelphia.

THIS book is good as far as it goes, but our chief criticism of it is that it does not go far enough. It is stated by the author that "most of the veterinary and many of the agricultural schools have adopted it as a text-book." If examinations are as thorough in America as they are in this country we can imagine some American graduates getting well plucked, because they may be examined on subjects, and very important ones too, in veterinary medicine, that are not mentioned at all in this book, *e.g.*, laminitis and staggers, mammitis and necrotic vaginitis in cattle. A book on veterinary medicine, too, at the present day ought surely to include some mention of canine diseases unless, indeed, one limits the use of the word "veterinary" to its narrowest sense. The pages on Foot and Mouth Disease are interesting as stating that the outbreaks of the disease in America in 1908 and 1914 were due respectively to contaminated smallpox vaccine and anti-hog cholera serum. The author strongly upholds immediate slaughter of all animals suffering from F. and M., in countries not permanently affected. The main sections in the book are devoted to Diseases of the Respiratory Organs, Circulatory, Digestive, and Reproductive Organs, Blood and Blood Producing Organs, Metabolism, Organs of Locomotion, Kidneys, Nervous System and Skin, and five chapters on Infectious Diseases. We do not consider that the lines on the treatment of the diseases are very strong in many cases; and instructions might often be lengthened and more fully explained whilst the best methods of treatment should be given first place and recommended. The oxalic acid method of treating azoturia, the arecovetrol method of treating what the author describes as "atony of the forestomachs" in the ox, and the usefulness of mag. sulph. in lung and throat cases, are not mentioned. The book is quite readable and instructive, well printed and bound, and will add to the sum of knowledge of veterinary medicine. G. M.

REPORT OF THE CHIEF VETERINARY SURGEON FOR SOUTHERN RHODESIA FOR THE YEAR 1921, with REPORT OF THE VETERINARY BAC-

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TERIOLOGIST. Government Printer, Salisbury, Rhodesia, 1922.

THIS Report is furnished by Messrs. J. M. Sinclair, M.R.C.V.S., and L. E. W. Bevan, M.R.C.V.S. It is a well-written, interesting and concise account of veterinary work in Rhodesia. Good progress is reported against African Coast Fever, Mr. Sinclair stating that "although the position is more satisfactory than at any time since the introduction of the disease in 1901 I am not sanguine enough to say that the eradication of all infection is within sight." The universal dipping of the cattle and the early detection of the disease are still as important as ever. The dipping, too, has caused a wonderful diminuti n in tick-infested cattle. Sufficient dip was sold during the year to deal with 1½ million cattle. Mr. Bevan makes some interesting observations on infectious abortion in cattle. This complaint was demonstrated in 117 herds by the agglutination test. Nineteen bulls were found to be culprits out of 202 tested. The vaccine used in Rhodesia is not submitted to heat but to a special process which renders the bacillus inert without destroying those processes which are necessary for the production of antibodies. It is therefore a valuable substitute for the so-called *live* vaccine. Its use has found favour with cattle owners and measures of quarantine and control are based upon it. Mr. Bevan suggests that many of the barren cows in Rhodesia act as carriers of abortion. Cows excreting the abortion bacillus are said to be probably responsible for some outbreaks of undulant or Malta fever occurring in the country. The inoculation of horses against horse sickness has been continued with considerable success. Mr. Bevan writes hopefully of inoculation against bovine plasmoses, and states that inoculated animals exported to Portuguese East Africa have lived where hitherto the majority of imported stock have died.

G. M.

Correspondence.

THE UNJUST INADEQUACY OF THE SALARIES OF THE INDIAN CIVIL VETERINARY DEPARTMENT.

To the Editor of THE VETERINARY JOURNAL.

SIR,—The discontent rife in the Indian Civil Veterinary Department cannot be allayed by merely writing to the professional journals. Some definite demands must be made, and made in the proper quarter and through the proper channel. The proper channel for such demands to be made through is undoubtedly the Council of the Royal College of Veterinary Surgeons, and the proper quarter is the Secretary of State for India.

The General Medical Council did much to improve the terms of the Indian Medical Service, and Officers of the I.C.V.D. have a right to expect the Royal College to do something for them in like manner. Two years ago the Royal College did make a representation to the Secretary of State about the terms of the I.C.V.D., but their requests were indefinite and nothing came of their suggestions.

All the British officers of the Government of India are now suffering very great hardship, and the time has arrived when something must be done for them if the administration of the country is to be carried

on efficiently. The officers of the I.C.V.D. have been very unfairly treated in the past, and their reasonable and just demands have been passed over unheeded. They should try once more before finally giving up the struggle. It is folly to make extravagant and excessive demands in the hope of obtaining something less. Fair terms should be demanded and pressed for with all insistence possible, and nothing falling short by one jot should be accepted willingly. If fair terms are not now acceded the only alternative is to retire quietly as soon as possible and make the best of a very bad job.

Officers of the I.C.V.D. have a right to demand terms as favourable as those accorded to the other Indian Public Services, recruited in a similar manner and under similar agreements and regulations. It is of no use to compare the I.C.V.D. with such services as the Indian Civil Service or the Indian Army or the Indian Medical Service, for they are recruited in a totally different way and are on a totally different footing. There can be no doubt that I.C.V.D. officers should be as well treated as officers of such services as the Forest Service, the Police Service, the Agricultural Service, the Engineering Service or the Educational Service. All these services now start at about Rs.500 a month. It is useless to ask for more, as a special case for the I.C.V.D. officer, as Government could not reasonably be asked to upset the general standards now set, but should other services receive better initial terms the same concessions should be made to the I.C.V.D. On the other hand, it is all very well for Government to say they intend to treat all alike in regard to initial pay and then to send one man to a city like Calcutta or Bombay and another man to a station like Coimbatore, or even into the heart of the jungle and expect them to be equally well off—the man in Calcutta or Bombay would be in dire poverty, whereas the man in the jungle or at Coimbatore would be comparatively comfortably off.

Indian Civil Veterinary Department officers have a right to demand that they should have the opportunity of rising to a rate of pay comparable to that drawn by officers of similar length of service belonging to other services. There is no reason why I.C.V.D. officers' prospects should be less than those of Forest, Agriculture, Police or Engineering officers and as such appointments as Directors of Agriculture, Superintending Engineers, Conservators of Forests, etc., etc., are not open to them. a grade carrying similar pay should be created, that is to say, Rs.1750-100-Rs.2150.

In order to rectify the inequality of spending power of the initial salary of I.C.V.D. officer a compensatory allowance should be given to those officers who are stationed in the great cities of India in addition to the present house allowances. This demand should be placed first and foremost, for it is a crying need. The amount of the allowance must depend on the city, but 20 per cent. of the salary of officers under 10 years' service and 10 per cent. of the salary of those over 10 years' service for the more expensive cities and half these rates for the less expensive ones would be fair.

The maximum pension to which an I.C.V.D. officer can attain after spending thirty years in the service is less than that attainable by officers of almost all the other services in India. This should be

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rectified, and pensions at the higher scale should be awarded to a proportion of I.C.V.D. officers. The maximum pension now attainable by an I.C.V.D. officer is Rs.7,500 per annum, whereas others can get Rs.8,500 per annum. The pension of Rs.8,500 per annum should be open to at least three I.C.V.D. officers.

Finally it is suggested that each member of the I.C.V.D. who agrees with the justice and reasonableness of these demands should write to the Secretary of the Royal College of Veterinary Surgeons, asking him to draw the attention of the Council to these demands, and expressing his approval of them, and asking that the Council should take the matter up and impress upon the Secretary of State the necessity of conceding them without delay.

G. McELLIGOTT, *Ex-officer of the I.C.V.D.*

To the Editor of THE VETERINARY JOURNAL.

SIR,—The Indian Civil Veterinary Department, once the most sought-after service of any open to British veterinary surgeons, is now going from bad to worse and no longer offers a career to young Englishmen.

A study of the following figures will prove illuminating. On January 1, 1920, there were 45 appointments in the Indian Civil Veterinary Department. There were 14 vacancies for want of officers to fill them. Of the 31 officers in the department at that date four have retired (two in the ordinary course and two prematurely), two have resigned and one has died. Of the 24 remaining one is due to retire in a few months in the normal course and five have expressed their intention of retiring prematurely. There will then be only 19 officers who are willing to continue to serve under present conditions and of these four have only about five more years to serve. Of those who joined the department subsequent to January 1, 1920, two have resigned already and others are about to do so as soon as their period of probation is over, and they are thus released from the obligation of refunding to Government the cost of their passages out and when also they are entitled to a free passage home. There are now eleven vacancies which will soon be augmented by the six or more further retirements.

The above statistics show conclusively that those who are in a position to know the conditions of the service in India are not contented and are anxious to go.

It is scarcely surprising that officers are discontented for their conditions of service and their prospects have been altered very materially. Not only are they subject to all the disabilities common to all British officers in India as the result of the Reform policy and the great fall in the exchange rate, but they have suffered relatively in their position towards the other services.

A few years ago, before the war, it was possible for a veterinary officer of the C.V.D. to live in a moderate degree of comfort and in the same style as his fellows in Government service of equal seniority; he could keep a horse or perhaps two, shoot and hunt, entertain his friends and join in the usual round of social functions; he could afford to marry and in most cases did so, and he had every prospect of main-

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taining himself and his wife and family decently and providing education for his children up to the same standard as his fellows.

All this has now been altered. The unequal treatment that the veterinary service has received in the recent revisions of salaries has altered his relative position. His social position has also been reduced. Officers of other services of less length of service have been placed on an equality with him or above him in the recently issued tables of precedence (a very real grievance in an official society, especially for the ladies). Whereas formerly the veterinary officer used to be as well off or even better paid than officers of the Agricultural, Forest, Engineering or Police services, he is now at a disadvantage, for not only have they had their initial salaries improved but also their prospects. The veterinary officers' initial salary remains what it was twenty-one years ago when the civilian element were first recruited, and he has no prospect of gaining any billet which carried a salary comparable to that of Directors of Agriculture, Conservators of Forests, Superintending Engineers or Deputy Inspectors-General of Police. He must be content with his ordinary salary, which shows no increase in either initial or maximum amounts (athough it is true that the intermediate rates of increase have been accelerated) and has no chance of getting more.

The veterinary officer feels this discrimination against him and his profession very keenly, for he has had as long or longer training than the officers of the services specified ; his training has been as expensive and as thorough and his scientific attainments are as high, and moreover he must willy-nilly live up to the same standard as men of the other services.

The results of the treatment accorded are manifested by the present state of affairs. Men are leaving and suitable applicants are not forthcoming to take their places or to fill the existing vacancies, and it is quite obvious that in seven or eight years' time, unless something is done to correct the present tendency, there will not be a British veterinary surgeon in the Indian Civil Veterinary Department.

The only way to arrest the discontent is to treat the men fairly and restore to them their relative position to the other services in India which the recent revision of salaries disturbed.

"A SLAVE OF THE LAND OF REGRETS."

SMITHFIELD CENTRAL MEAT MARKET.

AT the invitation of Lieut.-Colonel Dunlop Young, O.B.E., F.R.C.V.S., D.V.S.M., the Chief Veterinary Inspector for the City of London, the representative of the VETERINARY JOURNAL visited the Christmas Show of Meat at the Smithfield Central Market. The show was one which all veterinary surgeons, especially those interested in Public Health work, and the students of colleges, ought to have seen, as it was an object lesson in cleanliness and in what can be done by proper organisation, such as is found particularly in the supply sent by the Argentine Government, those of our Colonies, and the Chicago firms.

The exhibit of the Swift Beef Company drew special notice, and the

appearance and condition of the meat brought from across the Atlantic compared in every way favourably with that freshly killed in our home markets. It was practical evidence of the value of a proper system of veterinary inspection, and one could not but express the hope that the day is not far distant when England will more fully realise and appreciate the services of the veterinary profession in this direction.

R.A.V.C. OLD COMRADES' ASSOCIATION.

THE Second Annual Dinner of the R.A.V.C. Old Comrades' Association was held on the evening of Friday, December 8, at Anderton's Hotel, Fleet Street, E.C., and was a great success. Major-General Sir Layton Blenkinsop, K.C.B., D.S.O., the Colonel Commandant of the Corps, was in the chair, and was supported by the Director-General (Major-General Dunlop-Smith, C.M.G., D.S.O.) and about 190 officers, non-commissioned officers and men. The dinner was splendidly served to the accompaniment of excellent music, and a visitor, Mr. Chas. Pond, gave great pleasure by reciting some of his well-known pieces.

The arrangements were well made and the whole affair passed off without a hitch, thanks to the hard work put into it by the genial Secretary, Mr. Carr, and the Treasurer, Lieut. Warburton, aided by Mr. Fisher and others of the Dinner Committee.

At the Annual Meeting held in the United Service Institution at 5.0 p.m., it was decided that the annual subscription should be reduced from 5s. to 1s. Applications for membership should be made to the Secretary, c/o R.A.V.C. Records Office, Woolwich, S.E.

Personal.

A MINISTRY OF AGRICULTURE Travelling Research Fellowship has been awarded to Col. W. A. Wood, M.A., M.R.C.V.S., of the School of Agriculture, Cambridge, for a visit to Kiel to study methods of treating sterility. The Fellowships have been instituted to enable selected members of the staffs of institutions aided by the Ministry to visit foreign countries where research work on similar subjects is carried on, and to study at first hand the methods followed there.

NOTICES.

All communications should be addressed to 8, Henrietta Street, Covent Garden, London, W.C.2. Telephone: Gerrard 4646. Telegrams: "Baillière Rand, London."

Letters for the JOURNAL, literary contributions, reports, notices, books for review, exchanges, new instruments or materials, and all matter for publication (except advertisements) should be addressed to the Editor.

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